# Atlas of Texas Surface Waters

Maps of the Classified Segments of Texas River and Coastal Basins



**Texas Commission on Environmental Quality** 

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**Kathleen Hartnett White,** Chairman **R. B. "Ralph" Marquez,** Commissioner **Larry R. Soward,** Commissioner

Glenn Shankle, Executive Director

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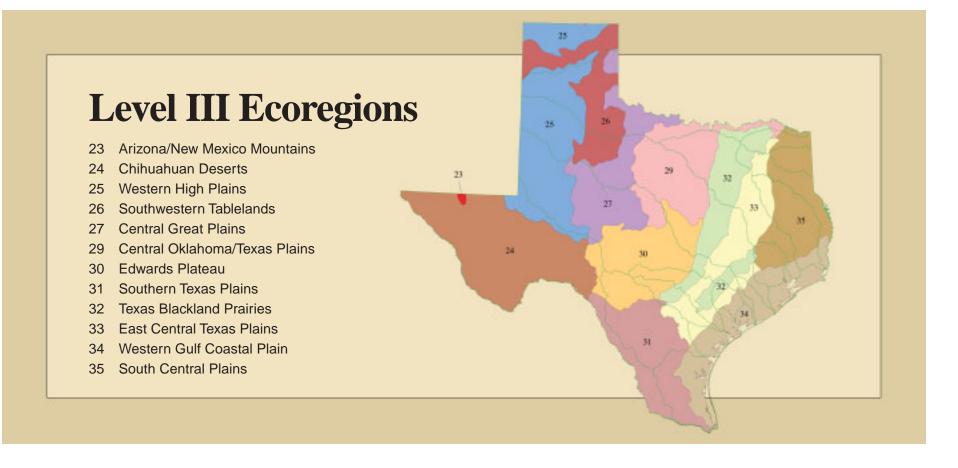


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### Introduction

Texas has more than 11,000 named water bodies. In order to manage the extent of surface waters and the ecological diversity of the state, the Texas Commission on Environmental Quality (TCEQ) has subdivided the most significant rivers, lakes, wetlands, and estuaries into classified segments. A *classified segment* is a water body or portion of a water body that is individually defined in the Texas Surface Water Quality Standards. The TCEQ has assigned classified segment numbers to most of the perennial (always flowing) streams and rivers in the state, and to reservoirs, bays, estuaries, and wetlands that have large areas or are of major public interest.

For example, the Brazos River and its tributaries, one of the state's largest watersheds, has been divided into 57 separate river segments and designated as Basin 12. Many lakes and some estuaries also lie within the Brazos River basin, and are also given segment numbers. Classified segments are further defined later in this introduction.

#### **PURPOSE**

This atlas is designed to support water quality management activities such as assessment of instream quality, planning, development of permits for discharges to state waters, allocation of grant funds, and other activities necessary to implement state regulations and the federal Clean Water Act.

The classified segments were established by the TCEQ in the *Texas Surface Water Quality Standards*. Adopted by the Commission in July 2000, the standards were codified as a rule in August 2000, in Sections 307.1 through 307.10 of the Texas Administrative Code.

#### WATER QUALITY STANDARDS

Water quality standards are the foundation for managing surface water quality. A water quality standard is the combination of:

- a designated use, and
- the criteria necessary to attain and maintain that use.

Standards define the goals for a body of water. The uses prescribe the purposes for which the water should be suitable—such as recreation, support of aquatic life, or drinking water supply. The criteria define the instream conditions necessary to support those uses. Water quality standards are the basis for regulatory and nonregulatory control of pollutants.

#### **DEFINITION OF SURFACE WATERS**

Surface waters in the state include lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico inside the territorial limits of the state, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable.

This includes the beds and banks of all water-courses and bodies of surface water that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems that are authorized by state or federal law, regulation, or permit, and that are created for the purpose of waste treatment are not considered to be water in the state.

#### **CLASSIFICATION OF SURFACE WATERS**

The major surface waters of the state are classified as segments for purposes of water quality management and for the designation of site-specific uses and criteria. Management includes activities such as assessment of instream water quality, issuance of permits to discharge into state waters, or allocation of grant funds. Classification supports the operation of the state's programs to assure compliance with state and federal requirements.

#### **Basins**

Classified segments are aggregated by basin. The basins are categorized as follows:

#### ■ River Basin Waters

Surface inland waters comprising the major rivers and their tributaries, including listed impounded waters and the tidal portion of rivers to the extent that they are confined in channels.

#### **■** Coastal Basin Waters

Surface inland waters, including listed impounded waters (but exclusive of River Basin Waters) that discharge, flow into, or otherwise communicate with bays or the Gulf of Mexico. Coastal Basin Waters include the tidal portions of streams to the extent that they are confined in channels.

#### **■** Bay (Estuary) Waters

All tidal waters, exclusive of those included in river basin waters, coastal basin waters, and gulf waters.

*Note*: A bay is a distinct area next to a parent ocean, sea, or gulf. An estuary is formed where a river or stream enters the sea or other tidally influenced water body. The salinity typically ranges from fresh in the headwaters to seawater at the mouth. Most coastal waters in Texas are named as bays, but have freshwater inflows that make them estuaries. Variation in the salinity regimes is one of the unique features of these waters.

#### ■ Gulf Waters

Waters that are not included in or do not form a part of any bay or estuary but which are a part of the open waters of the Gulf of Mexico within the limit of the state's jurisdiction.

#### Map Depiction

In this atlas, the boundaries of the major River and Coastal Basins are delineated with a thick green line. The Bay Waters are shown on the map for the River or Coastal Basin with which they are geographically associated, and also on one map that shows the entire coastline.

Where possible, there is one map per river or coastal basin. However, some maps combine multiple, contiguous basins. See the Table of Contents for two statewide reference maps that show:

- the names, locations, and numbers of each of the river basins; and
- the ecoregions of Texas.

Gulf Waters currently contain only one classified segment, 2501. The state's area of jurisdiction in the Gulf of Mexico extends from the mean high water mark out to 10.36 miles into the Gulf, in the area between Sabine Pass to the north and Brazos Santiago Pass to the south.

#### **Classified Segments**

A classified segment is a water body or portion of a water body that is individually defined in the *Texas Surface Water Quality Standards*. A segment is intended to have relatively homogeneous chemical, physical, and hydrological characteristics. A segment provides a basic unit for assigning site-specific standards and for applying water quality management programs of the agency. Classified segments may include streams, rivers, bays, estuaries, wetlands, lakes, or reservoirs.

The classified segments are assigned four-digit numbers. The first two digits correspond to the major basin in which they are located. The last two digits distinguish individual segments within the particular basin.

#### Map Depiction

The classified stream segments are drawn with dark blue lines. Classified lakes and bays are drawn as filled blue shapes. The boundaries between classified segments are delineated with a straight or angled purple line. Each segment is labeled with a name and a segment number. Very long streams are sometimes labeled twice. Descriptions of each segment define the geographic extent of the classified water bodies and are provided with each basin map in the atlas. Boundaries of the bay segments (identified as 24XX) have not been precisely defined. The illustrations of them in this atlas are approximations.

#### **Unclassified Segments**

Because of the great extent of waters of the state, not all bodies of water are classified in the standards. For example, when managing a classified segment of the Brazos River, it may be necessary

to examine water quality in the tributaries that flow into that segment. Some of these tributaries may not be part of the classified segment system. When that happens, for management purposes, the tributary is assigned a unique tracking number that is referred to as an *unclassified segment*. This unclassified tributary will be designated with the number of the classified segment in whose watershed it is located, along with a letter; for instance, tributaries of Segment 1806 would be 1806A, 1806B, and so on. The same numbering system applies to unclassified lakes. A tributary stream that does not flow into a segment within the state (that is, flows into another state) receives the general basin designation 0X00 (such as 0100). In management activities, both classified and unclassified segments are referred to generically as *water bodies*.

#### Map Depiction

Unclassified segments are not labeled in this atlas, although their locations may be depicted with light blue lines. Where an unclassified segment flows into a classified one, there will be no segment boundary shown, but the darker, heavier blue line will indicate the beginning of the classified segment.

#### OTHER MAPPING INFORMATION

In addition to the classified segments, each basin map shows the ecoregions in the basin, a directional indicator, major roads and cities, and counties. This information is excluded in the areas outside the basin for readability.

Some large metropolitan areas are shown on separate maps. These follow immediately after the map for the basin in which they are located. In other instances, metropolitan areas are shown as an inset.

#### Geographic Information Systems (GIS) Source Information and Disclaimer

The county boundaries and major streams were acquired from the U.S. Census Bureau and are part of the 1992 TIGER/Line dataset (1:100,000). The minor streams are based on the U.S. Environmental Protection Agency's River Reach File Version 3.0 Alpha Release (RF3-Alpha), completed in 1998 at a scale of 1:100,000. The river basins are derived from the 1974 Hydrologic Unit Map of Texas (1:500,000) and were digitized by the U.S. Geological Survey in 1990. The classified stream segment names, numbers, and boundaries are defined in Title 30, Chapter 307 of the Texas Administrative Code (TAC) and were revised by the Texas Commission on Environmental Quality in 2000. The highway data are based on enhanced U.S. Census Bureau 1990 TIGER/Line data (1:100,000) published in 1992 by Geographic Data Technology (GDT), Inc. The cities were derived from U.S. Census Bureau 1998 TIGER/Line data (1:100,000).

The maps in this atlas were compiled by the Information Resources Division of the Texas Commission on Environmental Quality. The Environmental Planning and Implementation Division, the Water Quality Division, and the Monitoring Operations Division planned, compiled, and published the atlas. No claims are made to the accuracy or completeness of the data or to its suitability for a particular use.

#### FOR MORE INFORMATION

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